

IN THE CLAIMS

1. (Currently Amended) An exercise apparatus comprising:
  - a frame;
  - a pivot axle supported by said frame;
  - a pedal lever;
  - a pedal, having a toe portion and a heel portion, secured to a central portion of said pedal lever;
  - a reciprocating guide mechanism coupled to a first portion of said pedal lever effective to guide said first portion of said pedal lever in a generally horizontal reciprocating motion;
  - a crank rotationally connected to said pivot axle; and
  - an attachment assembly including a first link having a first portion pivotally attached to the end of said crank and a second portion attached to a second portion of said pedal lever wherein said attachment assembly is effective to move said second portion of said pedal lever in a non-circular, horizontal and vertical path as said crank rotates about said pivot axle resulting in said pedal moving in a generally elliptical path; and
  - a stride adjustment mechanism operatively ~~associated with~~ connected to said first link effective to ~~move at least a portion of~~ lengthen said first link with respect to said crank thereby being effective to lengthen the horizontal portion of said elliptical path.
2. (Currently Amended) The apparatus of Claim 1 wherein said second portion of said first link is pivotally connected to said second portion of said pedal lever and said stride adjustment mechanism includes an actuator for ~~extending the length~~ effecting said lengthening of said first link.
3. (Original) The apparatus of Claim 1 wherein said crank includes a roller that abuts said pedal lever thereby permitting horizontal movement of said pedal lever with respect to said end of said crank and wherein said stride adjustment

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mechanism includes an actuator for moving said first portion of said first link linearly with respect to said crank.

4. (Currently Amended) The apparatus of Claim 1 wherein the apparatus includes a user input system and a control system operatively connected to said user input system and wherein said stride adjustment mechanism includes an actuator operatively connected to said control system for moving said lengthening of said first link in response to stride signals from said user input system.

5. (Currently Amended) The apparatus of ~~Claim 5~~ Claim 1 wherein the apparatus additionally includes a speed sensor operatively connected to said control system for sensing the speed of movement of said pedal and wherein said control system is effective to cause said stride adjustment mechanism to lengthen effect said lengthening of the horizontal portion of said elliptical path with an increase in said pedal speed.

6. (Original) An exercise apparatus comprising:

- a frame;
- a pedal lever;
- a pedal, having a toe portion and a heel portion, secured to said pedal lever;
- a guide mechanism coupled to a first portion of said pedal lever effective to guide a first portion of said pedal lever in a generally horizontal reciprocating motion;
- a pivot axle supported by said frame;
- a crank rotationally connected to said pivot axle;
- an attachment assembly operatively connected to said crank and a second portion of said pedal lever wherein said attachment assembly is effective to move said second portion of said pedal lever in a horizontal and vertical path as said crank rotates about said pivot axle resulting in said pedal moving in a generally elliptical path; and
- a control system;

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a speed sensor operatively connected to said control system for sensing the speed of movement of said pedal; and

a stride adjustment mechanism operatively associated with said attachment assembly and operatively connected to said control system effective to lengthen the horizontal portion of said elliptical path as a function of pedal speed.

7. (Original) The apparatus of Claim 6 wherein said stride adjustment mechanism increases

said horizontal portion of said elliptical path as the speed of said pedal increases.

8. (Original) The apparatus of Claim 7 wherein said stride adjustment mechanism includes an

actuator operatively connected to said control system and integrated with said crank effective to lengthen said crank in response to said increasing pedal speed.

9. (Original) The apparatus of Claim 6 wherein said attachment assembly includes a first link

having a first portion pivotally attached to the end of said crank and a second portion attached to a second portion of said pedal lever and wherein said stride adjustment mechanism is operatively associated with said first link effective to move at least a portion of said first link with respect to said crank thereby being effective to lengthen the horizontal portion of said elliptical path.

10. (Original) An exercise apparatus comprising:

a frame;

a pedal lever;

a pedal, having a toe portion and a heel portion, secured to said pedal lever;

a guide mechanism coupled to a first portion of said pedal lever effective to guide a first portion of said pedal lever in a generally horizontal reciprocating motion;

a pivot axle supported by said frame;

a crank rotationally connected to said pivot axle;

an attachment assembly operatively connected to said crank and a second portion of said pedal lever wherein said attachment assembly is effective to move said second portion of said pedal lever in a horizontal and vertical path as said crank rotates about said pivot axle resulting in said pedal moving in a generally elliptical path; and

a control system;

a user input and display system, operatively connected to said control system, including a plurality of input keys to permit a user to input information into said control system and at least one display for displaying exercise data;

a resistive force generator operatively connected to said crank and said control system for generating a resistive force to the movement of said pedal;

a speed sensor operatively connected to said control system for sensing the speed of movement of said pedal; and

a stride adjustment mechanism operatively associated with said attachment assembly and operatively connected to said control system effective to change the horizontal portion of said elliptical path as a function of a selected portion of said information.

11. (Original) The apparatus of Claim 10 wherein said selected portion of said information is a desired pedal speed.

12. (Original) The apparatus of Claim 10 wherein said selected portion of said information is a level of said resistive force.

13. (Original) The apparatus of Claim 10 wherein said selected portion of said information is user height.

14. (Original) The apparatus of Claim 10 wherein said selected portion of said information is user weight.

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15. (Original) The apparatus of Claim 10 wherein said selected portion of said information is user height.

16. (Original) The apparatus of Claim 10 wherein said selected portion of said information is a direction of user stepping motion on said pedal wherein said horizontal portion of said elliptical path is reduced when said direction is in a backward direction.

17. (Original) The apparatus of Claim 10 wherein said selected portion of said information is an exercise program.

18. (Original) An exercise apparatus comprising:  
a frame;  
a pedal lever;  
a pedal, having a toe portion and a heel portion, secured to said pedal lever;

a guide mechanism coupled to a first portion of said pedal lever effective to guide a first portion of said pedal lever in a generally horizontal reciprocating motion;

a pivot axle supported by said frame;  
a crank rotationally connected to said pivot axle;  
an attachment assembly operatively connected to said crank and a second portion of said pedal lever wherein said attachment assembly is effective to move said second portion of said pedal lever in a horizontal and vertical path as said crank rotates about said pivot axle resulting in said pedal moving in a generally elliptical path; and

a control system;  
a user input and display system, operatively connected to said control system, including a plurality of input keys to permit a user to input information into said control system and at least one display for displaying exercise data;

a resistive force generator operatively connected to said crank and said control system for generating a resistive force to the movement of said pedal;

a speed sensor operatively connected to said control system for sensing the speed of movement of said pedal; and

a stride adjustment mechanism operatively associated with said attachment assembly and operatively connected to said control system effective to change the horizontal portion of said elliptical path as a function of an apparatus operating parameter.

19. (Original) The apparatus of Claim 18 wherein said operating parameter is said pedal speed.
20. (Original) The apparatus of Claim 18 wherein said operating parameter is said resistive force.
21. (Original) The apparatus of Claim 18 wherein said operating parameter is the direction of user stepping motion on said pedal wherein said horizontal portion of said elliptical path is reduced when said direction is in a backward direction.
22. (Original) The apparatus of Claim 18 wherein said control system controls said resistive force according to an exercise program and wherein said operating parameter is the current portion of said exercise program.
23. (Original) The apparatus of Claim 18 wherein the apparatus additionally includes a user heart rate monitor and wherein said operating parameter is the user's heart rate.

Claims 24-37 (Withdrawn)